Colorado State University

HIGH PLAINS INTERMOUNTAIN CENTER
FOR AGRICULTURAL HEALTH & SAFETY

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HICAHS
FOR AGRICULTURAL HEALTH & SAFETY

2014 Annual Report

(September 15, 2013 – September 14, 2014)

CDC/NIOSH Cooperative Agreement No. 2 U54 OH008085

Something to celebrate! For the third year in a row, the U.S. Bureau of Labor Statistics has reported a decline in fatalities among the agriculture, forestry, fishing and hunting industries. There were 479 fatalities in these industries in 2013, which is 6% lower than 2012![1]

This is encouraging news, but much more work needs to be done to reduce these fatalities. Despite the declines, the fatality rate remains the highest of any industry sector at 22.2 fatal injuries per 100,000 full-time equivalent workers. Nearly half of these fatalities (46%) are linked to transportation incidents, which includes roadway, off-road, air, water and rail vehicle accidents.[2]

The High Plains Intermountain Center for Agricultural Health and Safety (HICAHS) is making strides towards reducing these transportation "accidents." HICAHS works closely with NIOSH, other NIOSH-sponsored Agricultural Centers, and agricultural organizations to learn more about the root causes of injury and illness in the agriculture industry.

We are training Montana ranchers on safely using all-terrain vehicles (ATVs) for herding cattle, mending fences, and spraying pesticides (p. 10). By designing affordable roll-over protective structures (ROPS), we hope to reduce the great number of fatalities occurring during a tractor rollover (p. 4). Lastly, HICAHS has been participating in the Wyoming-Colorado Occupational Health and Safety Coalition since 2009. This group is beginning to see declines in transportation-related fatalities in Wyoming (p. 3). As we begin a new year, we are optimistic that we will have a great impact on transportation-related fatalities.

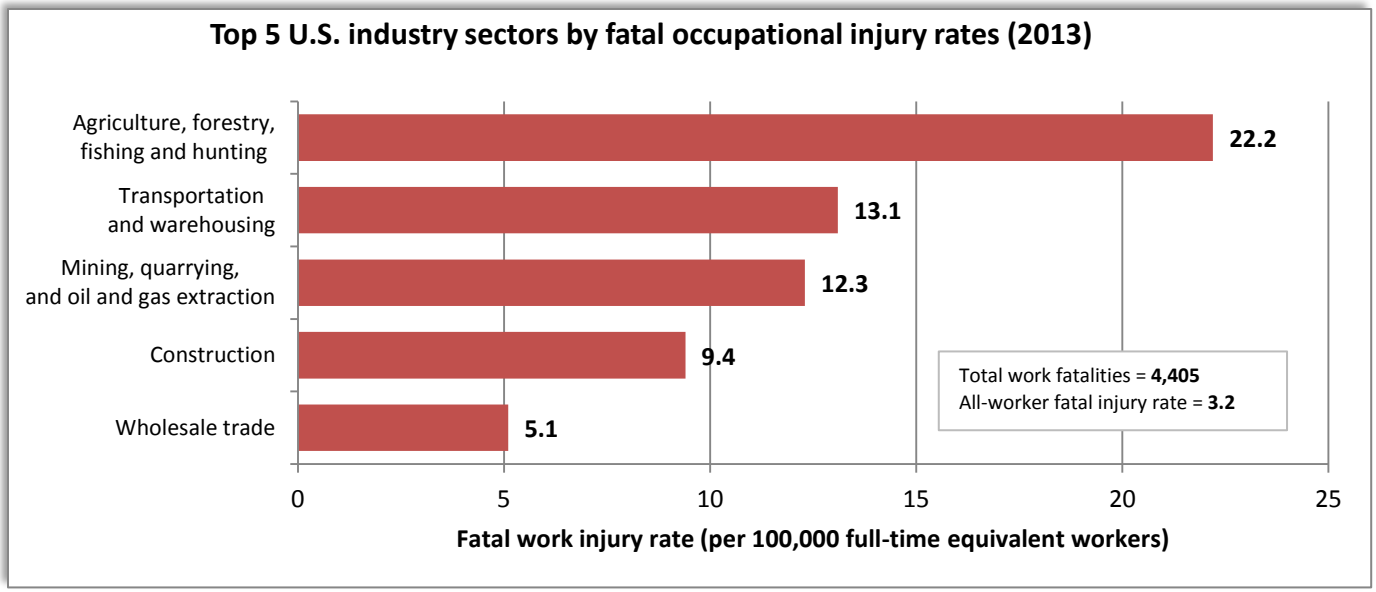


Figure 2. Despite a three-year downward trend in fatalities, agriculture, forestry, fishing, and hunting still have the highest rate of on-the-job fatalities in the United States.

Source: United States Bureau of Labor Statistics, 2013 preliminary data. www.bls.gov/news.release/pdf/cfoi.pdf

2014 Annual Report

HICAHS Administrative Core

Wyoming-Colorado Occupational Safety and Health Coalition

Wyoming consistently experiences some of the highest rates of occupational injuries and fatalities in agriculture, transportation, oil and gas, and other industries.

In 2009 under the leadership of the NIOSH Western States Office and Alaska Pacific Office, HICAHS and the Mountain and Plains Education and Research Center (MAP ERC) partnered with Wyoming government to form a Wyoming Colorado Occupational Safety and Health Coalition (WY-CO OSH). Participants include the Wyoming Departments of Workforce Services R&P (Workers Compensation), OSHA, and Public Health, the Wyoming State Occupational Epidemiologist, Wyoming Extension, and University of Wyoming researchers.

The WY-CO OSH Coalition has made important progress in organizing and fostering alliances among industry sectors in Wyoming – starting with Oil and Gas, Refinery, Transportation, Construction, and now Nursing and Agriculture. The goals of the alliances are to improve occupational health and safety, engaging more established businesses to mentor smaller businesses and share resources such as their occupational health and safety management programs. HICAHS and the MAP ERC provide expertise and additional resources to the alliances. Wyoming Extension now has representation on the HICAHS External Advisory Board. Wyoming OSHA has also established a safety improvement program. Participating businesses receive a premium discount on their Workers Compensation premiums. While rates are not available for the most recent year (2013), the WY State Occupational Epidemiologist Report documents a significant reduction in workplace fatalities in Wyoming primarily driven by a drop in transportation–related fatalities. Workers Compensation claims and hospitalizations have also decreased.

Have a question about agricultural health and safety? Ask an expert at *www.extension.org/farm_safety_and_health*

Health and Safety Outreach: Progressive Dairyman, FReSH, YouTube

HICAHS engages in outreach by sharing health and safety knowledge and research finding at conferences, sharing resources, and developing partnerships that advance health and safety.

Many of our resources are now provided online to improve dissemination and accessibility.

David Douphrate, in collaboration with HICAHS staff, continues to write a monthly column on health and safety issues in the *Progressive Dairyman*, one of the leading publications on the dairy industry with a circulation on 27,789.[3] Between January and May 2014 the monthly column received 582 website clicks.

The community-based Cooperative Extension System is providing objective, science-based information from land-grant universities and partners nationwide for free online at extension.org. The content areas are each divided into a "Community of Practice." As part of the leadership team for the *Farm and Ranch eXtension in Safety and Health (FReSH)* Community of Practice (www.extension.org/farm_safety_and_health) we provide article reviews and support the development of the "Ask an Expert" feature and article writing. The entire website receives more than 18,000 visits per year.

On November 4, 2013, HICAHS was proud to launch a new YouTube channel in conjunction with the 8 other NIOSH-funded Agricultural Health and Safety Centers and the NIOSH-funded Children's Center. The "*U.S. Agricultural Health and Safety Centers*" channel, as it is called, had 13,152 views by the close of the fiscal year on September 14, 2014 (www.youtube.com/usagcenters). Two of the top five most popular videos were partly sponsored by HICAHS: General and Outside Worker Training (833 views) and Feeder Safety Training (679 views). Both of these videos are part of the "Considering Human and Animal Safety" video series produced by New Mexico Dairy Extension Specialist Robert Hagevoort.

Computer-based ROPS design program

Tractor overturns are terrifying and can be potentially fatal for the driver. When a tractor overturns the driver is protected from being crushed through the tractor's roll-over protective structure (ROPS) and the use of a seatbelt. Although all tractors manufactured in the United States after 1986 are built with a ROPS, many older tractor models are still in use and do not have a

PROGRESSIVE DAIRYMAN

October 2013: Dairy Worker Safety Training

November: Safety in Cold Environments

December: Vaccination Safety

January 2014: Shiftwork on dairy farms

February: Silage Safety

March: Open-air manure storage safety

April: Workplace violence on dairy farms

May: What are zoonotic diseases? (Part 1 of 2)

May: Preventing zoonotic disease on the dairy (Part 2 of 2)

August: Emergency preparedness on dairy farms

More articles from the dairy worker safety and health series can be found at www.progressivedairy.com

A Massey Ferguson tractor with a retrofitted roll-over protective structure (ROPS).

ROPS. Tractor overturns remain a leading cause of occupational fatalities on farms in the United Sates.

HICAHS is creating a computer-based design program that will quickly develop a customized ROPS design based on tractor weight and dimensions. The final product from the program will be ROPS design drawings with specifications that can be used to construct the ROPS.

This project is nearing the end of its 5-year timeline and preliminary results are positive. The ROPS design construction drawings were added to the Computer-based ROPS Design Program (CRDP) this year. This includes drawings of the posts, crossbeam, baseplates, corner braces and strapping. After inputting tractor dimensions into the program, ROPS for 3 tractors (Massey Ferguson 265, Allis Chalmers 5040 and Long 460) were designed and successfully constructed using a local fabricator. ROPS materials and construction costs were documented and averaged from $500 to $600. Testing results show that the ROPS met the energy and load requirements of SAE J2194, an OSHA-approved standard for ROPS design.

Computer simulations of how the ROPS will perform are under development so that ROPS designs can be tested without the use of a testing facility. One of these simulations will test whether there is sufficient clearance around the driver during a rollover (Clearance Zone Modeling). Another simulation will test the performance of the ROPS under stress (Finite Element modeling of ROPS static test performance).

To improve the usability of the Computer-Based ROPS Design Program (CRDP), an app is being developed for use on smart phones or tablets. The app will display photos of the tractor components to be measured and will allow the user to input these dimensions directly into the app.

As the final step, ROPS manufacturers will be asked to use the computer-based design program to build and test ROPS. The input from these manufacturers will be used to make the final edits to the program before releasing the program to the public.

HICAHS Focus on the Dairy Industry

Occupational health and safety management for dairies

We continue to partner with producers and industry service companies to develop tools and strategies to improve human resource management practices.

Funding from the Director's Discretionary Fund was provided to Agrimetrica to assist in the development of

of a human resources program . Agrimetrica is a software company that provides dairy producers with a computerized system for tracking and optimizing milk production and quality; this effort will build on their existing system to manage employee health and safety risk and will include training modules.

Utilizing a national OSHA Consultation database, HICAHS is conducting research into the implementation and efficacy of the OSHA Form 300 on dairies. The form is used by OSHA Consultants to evaluate management systems.

The human and economic impact of illness, injury, and fatalities on the dairy industry is significant. In an industry with low profit margins and highly volatile global markets, reducing employee turnover and production costs may make the difference in economic survival. HICAHS efforts will help the dairy industry take a systematic approach to risk management needed to sustain a healthy, productive workforce as an integral component of production, food safety, and animal welfare.

HICAHS has developed several advisory boards to assist with the direction and development of its dairy projects. The HICAHS Dairy Network, Dairy Advisory Board, and International Dairy Research Consortium provide avenues for partnership among researchers and stakeholders within the dairy industry. The IDRC will be meeting again in October 2014 during the 7th International Symposium: Safety and Health in Agricultural & Rural Populations: Global Perspectives Conference in Saskatoon, Saskatchewan, Canada. At the core of all of our projects and interventions has been a focus on stakeholder engagement and partnership building. The HICAHS approach to address health and safety is to LISTEN to dairy stakeholders, and RESPOND to expressed needs and concerns with sound and relevant research and outreach efforts. Our dairy projects are developed in response to the needs of dairy industry stakeholders.

HICAHS Dairy Board members and staff at the 2014 Dairy Board Meeting in Sioux Falls, South Dakota.

Clockwise from top left: John Rosecrance, Louise Quijano, Robert Hagevoort, Noa Roman-Muñiz, Kevin Dole, Paul Gunderson, Matt Nonnenmann, J.W. Schroeder, Nicolien Hammink, David Douphrate, Olga Reuvekamp, Steve Reynolds, and Allison Cassidy.

Antimicrobial Assessment

Paul Gunderson, Director of the Dakota Precision Ag Center, has begun a new project with HICAHS to understand the soil composition of livestock operations. His two-year project titled, "Exploring Shed Antimicrobial Exposures within High Plains Livestock Operations" will be assessing the presence of the antimicrobial tetracycline in the soil and manure of dairy and swine operations. Agricultural workers may be at risk of being exposed to antibiotic-resistant organisms though handling and applying livestock manure. This project will identify and quantify the antimicrobials that are present in the manure, plus provide farmers with meaningful information about the composition of their soil.

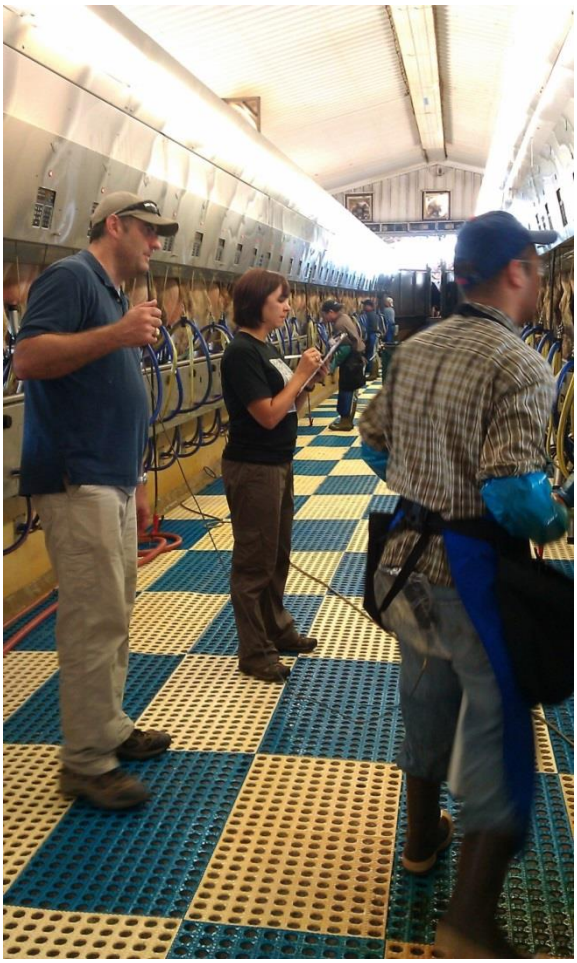
> At the OSHA training we talked about the Workers Compensation's experience modifier. Yesterday I received our annual renewal proposal [from our insurance company]. Hilltop's experience modifier has dropped from 0.86 to 0.74! This reflects exactly how long we've been working with HICAHS…it is great to see that the baby steps we've made seem effective. Thank you again for helping us become better employers providing a safer workplace."
>
> -Olga Reuvekamp, Owner of Hilltop Dairy

OSHA 10-Hour Training for Dairy Farmers

According to the USDA, the number of dairies with at least 2,000 milk cows doubled between 2000 and 2006.[4] A challenge to dairy producers, who are seeking to ensure safe working environments and to comply with state or federal occupational safety and health regulations, is the increased employee numbers. HICAHS has been providing training since 2009 to dairy producers concerned about OSHA compliance. This year we provided OSHA 10-Hour training to twelve dairy managers, owners, and Dairy Co-Op representatives from September 11-12, 2014 in Brookings, South Dakota. South Dakota State University Extension partnered with HICAHS to offer the training and a local dairyfarmer hosted a mock OSHA inspection following the training. The test scores after attending the program improved 28% after taking the course.

Worker Health, Safety and Performance in Milking Parlors

The HICAHS project "Exposure Assessment and Intervention Analysis in Large-Herd Dairy Parlors" is addressing the health and safety of large-herd dairy workers through assessment and comparison of physical workloads (motion, posture, muscle forces), and their effect on worker performance. In partnership with dairy equipment manufacturers and dairy producers, researchers are evaluating targeted parlor design and milking tools for their effectiveness at reducing physical loads and enhancing worker performance. The results will be used to determine an optimum parlor milking pit



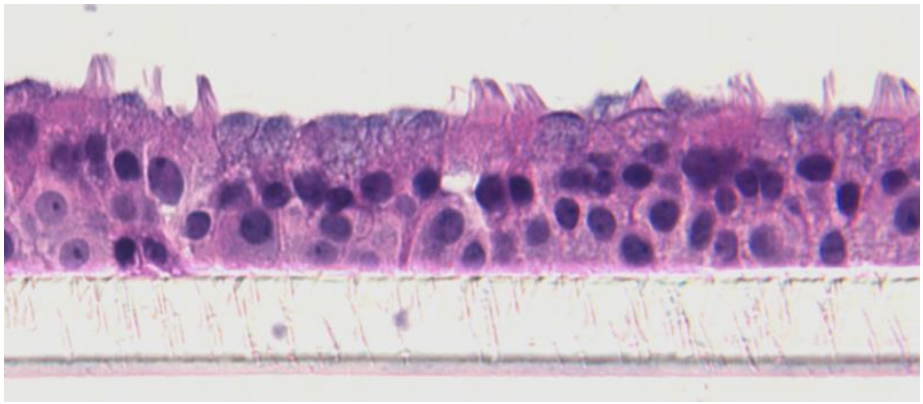
HICAHS Researchers David Douphrate and Florencia Pezzuti collect data on the physical workloads of dairy parlor workers.

height and develop recommendations for dairy producers to address parlor design, milking tools and worker performance and productivity. This innovative and novel work is the first to quantify and compare full-shift and task-specific physical exposures in large-herd parlors in the United States. This is being accomplished using direct measurement technology and clinically-relevant exposure metrics. This will also be the first study to use motion capture technology in the challenging work environments of milking parlors. The potential impact of this project is significant due to an industry shift toward larger-herd dairy operations and associated challenges of working in these high-volume milking facilities. With the goal of higher volume milk production at lower costs, dairies will continue to grow in size and capacity. As the trend toward larger herd sizes continues, the need for research efforts which simultaneously address worker health and safety as well as worker performance is magnified.

Improving our understanding of respiratory disease: Bioaerosol Exposures and Models of Human Response in Dairies

Respiratory diseases including chronic bronchitis and occupational asthma are a significant problem among dairy workers, contributing to high employee turnover, decreased productivity, and higher worker compensation costs. Improved characterization of agricultural aerosols is needed to explain the causes of respiratory diseases and to develop interventions that effectively reduce exposures.

A unique aspect of this research project is the development and application of a novel aerosol-to-cell exposure-response model using human lung cells and nasal cells. Many traditional in vitro studies rely on the use of particle extracts (or suspensions) with unrealistic doses. Previous toxicological studies have also focused on exposures to the smaller, respirable size fraction of organic dusts in farm environments (i.e. ≤ 10 microns.) This study has demonstrated that particles



Bronchial cells (pictured here) were exposed to different size particles of dairy dust and then tested for inflammatory response in the Bioaerosol Exposures study.

larger than 10 microns are a substantial component of aerosolized dust in dairies. These larger particles tend to deposit in the upper airways; thus, the nasal and bronchial epithelial cells both represent targets of agricultural dust exposures. In this part of the study we exposed well-differentiated normal human bronchial epithelial cells and normal human nasal epithelial cells to two different size fractions (PM10 and PM>10) of re-aerosolized dairy parlor dust using a novel aerosol-to-cell exposure system.

Levels of pro-inflammatory markers (IL-8, IL-6, and TNF-α) were measured two hours after exposure. To our knowledge, this is the first study to evaluate the effects of distinct size fractions of agricultural dust on human airway epithelial cells. While our exposure model does not fully mimic the nasal or bronchial lung, our results suggest that when selecting a 'screening' cell type for evaluating the pro-inflammatory response of airway cells to agricultural dusts, human bronchial cells offer greater sensitivity to PM10 than nasal cells. Alternatively, both nasal and bronchial cells were sensitive to PM>10 agricultural dusts. Because we observed significant responses in cells exposed to PM>10, our work suggests that particles in the larger inhalable size fraction should continue to be considered in addition to particles in the respirable and thoracic size fractions in future agricultural dust studies.

This project is helping to develop better tools for understanding and preventing agricultural lung disease. Potentially this project could help improve the respiratory health of the more than 160,000 workers in U.S. dairies, reducing medical and workers compensation costs, reducing employee turnover, and improving productivity. The project has broad implications for reducing exposures to inflammatory aerosols in a wide range of agricultural and other industries.

Note: The cell studies component of "Bioaerosol Exposures and Models of Human Response in Dairies" presented here was part of the doctoral dissertation of Brie Hawley, Ph.D.

Enhancing safety training on dairies

HICAHS is developing a dairy safety training program designed with regard to the culture and language of the Spanish-speaking worker population on dairy farms. Last year focus groups were conducted in Colorado and South Dakota dairies to identify barriers and

facilitators to health and safety behavior on dairy farms. Results from the focus groups have been analyzed by Principal Investigator Noa Roman-Muniz and research team members, and will be presented at the Work, Stress & Health Conference co-sponsored by the National Institute for Occupational Safety and Health in May 2015. The results are also being used to create guided interview questions to be administered to dairy workers this fall and winter, and a zoonotic disease training program to be administered and assessed in 2015.

Community-Initiated Grants Program

Through community-initiated small grants, community organizations and HICAHS researchers are engaged together in agricultural health and safety education and training programs. A great emphasis of the Community-Initiated Grants Program is to improve all-terrain vehicle (ATV) safety within the agricultural community.

ATVs are lightweight, easily maneuverable, and fast, making them attractive to use on farms and ranches for tasks that had been accomplished with the help of horses, farm dogs, and trucks or pick-ups. Unfortunately, ATVs are inherently unstable, leading to crashes resulting in numerous injuries and fatalities. The Consumer Product Safety Commission reports more than 12,000 people have been killed using ATV since 1982.[5] Only 20 percent of ATVs at work are used in agriculture, but a staggering 65 percent of all occupational ATV-related deaths between 1992 and 2007 in the United States occurred on agricultural operations![6]

A utility vehicle is loaded with grain at a South Dakota dairy farm. Utility vehicles such as these are safer than ATVs.

Through a partnership with Montana State University Extension, ranchers, and HICAHS, we have created educational flyers and posters on the four primary ranching tasks that involve intensive ATV use: (1) animal handling, (2) fence building and mending, (3) weed control/spraying, and (4) general transportation. These items can be found on the website created for this project: http://www.safeatv.org/.

HICAHS expanded the ATV safety program to include hands-on training for ranchers in Montana. A major barrier for ranchers to obtain the current ATV Safety Institute (ASI) training was the lack of qualified trainers within the region. In response to this need HICAHS has supported ASI Certification for 11 Montana State University Extension Agents. These Extension Agents have, in turn, trained more than 60 agricultural

producers and more training sessions are planned. With the current capacity of ASI certified trainers in MT we expect to see between 132 – 176 producers trained in the ASI hands-on principles for safe vehicle operation per year with many more attending various types of field and classroom trainings.

HICAHS sponsored the development of an "ATV Safety Training Kit" for Ag Extension Agents. The kit includes poster placards, a PowerPoint presentation, an educational script and evaluation materials. Thirty five ATV Safety Training Kits have been produced and are provided to Extension agents with ASI certification or have taken the ASI training.

Most recently, two female Extension Agents, ASI Certified, provided training to six female Ag producers and held a focus group to explore unique needs related to ATVs for women in Ag. Another Extension Agent video recorded over seven hours of training to be used to develop web 2.0 training to increase awareness of risks associated with ATVs and lead producers toward adoption of the ASI hands-on training. Video editing is underway with a finished product planned for 2015.

The momentum continues to grow in Montana for increased capacity to train Ag producers and increase the awareness of ATV risks and safer vehicle operation through partnerships. Montana Extension Agents secured ATV safety training approval for pesticide licensing points because ATVs are used for pesticide application. As the number of Ag Extension Agents are trained in ATV safety, the diffusion of knowledge and skills is growing throughout the Ag community.

A recent partnership with the Workers Compensation Claims Assistance Bureau, Employment Relation Division, Department of Labor & Industry resulted in the sharing of five years of ATV related injury and fatality cases, 2006-2012, from MT. The data has allowed us to establish baselines for workers compensation ATV events and provide comparisons to future data. We hope to see decreases in events due to HICAHS interventions. We are excited to measure real impacts in the not-to-distant future.

Pilot Program

HICAHS received and awarded a record number of pilot proposals during the 2014 fiscal year. In combination with *HICAHS Director's Discretionary Funds* four projects were awarded representing a wide diversity of health and safety issues in agriculture.

Veterinarian Craig McConnel is identifying the presence of *Escherichia coli* O157 in dairy cattle, a bacterial pathogen of worldwide public health concern. Cattle are asymptomatic reservoirs for *E. coli* O157, and the organism generally colonizes the hindgut and is shed in the feces at low concentrations. This shedding impacts not only food safety but worker safety and environmental contamination. Human disease outbreaks have been linked to *E. coli* O157 contamination of meat, unpasteurized milk, and the environment. The project aims to identify whether shedding is different among

calves and adult cows, and whether the *E. Coli* O157 isolates are susceptible to antimicrobials. Antimicrobial resistance is one of the CDC's top five issues for 2014.[7]

Farmers inhaling the emissions from burning vegetation (aka "biomass") are at risk for various health problems, but the reasons for this are not fully understood. Scott Noblitt, a chemist at Colorado State University, is identifying if aerosolized cyanate plays a role in the negative health effects linked to burning biomass. With funding from the HICAHS pilot program his team has developed a new aerosol-filter extraction protocol, microchip electrophoresis analysis method, and data-analysis approach for detecting cyanate in biomass-burning aerosol particles. Measurement of cyanate is difficult due to its high reactivity and short lifetime, but they successfully measured cyanate in frozen aerosol samples from wood burning. Next they plan to analyze fresh aerosol samples for cyanate.

Bledar Bisha from the University of Wyoming is evaluating several modifications to current bioaerosol sampling devices to improve capture and molecular detection of viruses from aerosols. Aerosol-based transmission of viral zoonotic agents to agricultural workers in poultry, cattle, and swine operations is a public and occupational health and safety risk. For example, those working in swine operations are more frequently exposed to influenza virus than other populations. Findings from the pilot study show that incorporating resin as a capture matrix into the SKC BioSampler significantly improved capture and subsequent detection, which is an improvement on sensitivity of detection in comparison to currently used methods in air sampling for viruses in agricultural environments.

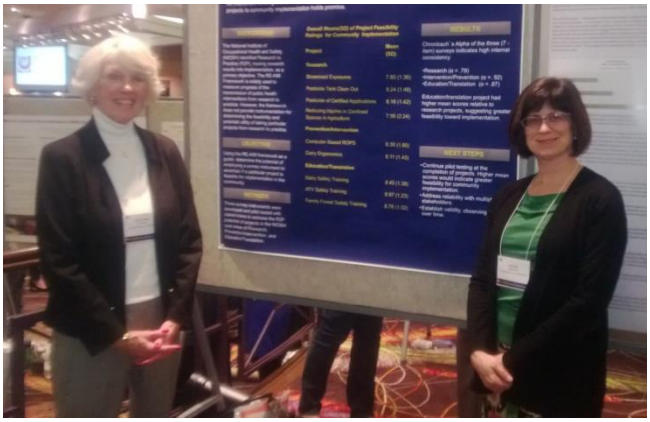
Lastly, a collaborative project funded by *HICAHS* and the *Southwest Center for Agricultural Health, Injury Prevention, and Education* is identifying small molecules in poultry dust that may lead to lung inflammation. Greg

Visit the U.S. Agricultural Health and Safety Centers YouTube Channel www.youtube.com/usagcenters

Dooley, funded by *HICAHS*, and Rena Saito and Vijay Boggaram, funded by the *Southwest Center*, have isolated and characterized pro-inflammatory small molecules through mass spectrometry and biological assays. The molecules induced interleukin-8 induction as a marker of inflammation. Surprisingly, the pro-inflammatory molecule has yet to be identified. A search against various mass molecular databases for a match did not yield any results, so the team is continuing its research.

The HICAHS Pilot Program has new leadership this year. Maggie Clark and Sheryl Magzamen are both

Assistant Professors of Epidemiology at Colorado State University's Department of Environmental and Radiological Health Sciences. Dr. Clark has been involved in bioaerosols research for many years working with HICAHS Director Stephen Reynolds. Dr. Magzamen is a new faculty member at Colorado State University whose research interests include asthma epidemiology, air pollution, and social determinants of health. The HICAHS team is grateful to them for accepting this leadership role as former HICAHS Pilot Director John Volckens transitions to a new role in the Engineering Department. Drs. Magzamen and Clark have already generated several new ideas for expanding the pilot program during their past few months in this role. Their enthusiasm, creativity, and leadership is appreciated.



Vicky Buchan (pictured left) and Louise Quijano present the results from administering the "r2p" survey at the 2013 American Evaluators Conference.

Evaluation Program

The Evaluation Project team has had a very busy year documenting progress on existing HICAHS projects, evaluating HICAHS Symposiums, HICAHS Advisory Board Meetings and undertaking a comprehensive targeted regional needs assessment. Evaluation staff have been actively involved in the *ECO Group*, a collaborative group comprised of evaluators, coordinators, and outreach personnel from all 10 Ag Centers nationwide. The ECO Awareness Team promoted National Farm Safety Week from September 21-27, 2014. The ECO group also produced an All-Center Fact Sheet, a template for promoting individual Centers, and an evaluation presentation by Julie Rainwater to the conference for NIOSH sponsored Centers in Oct. 2013. In addition, Drs. Quijano and Buchan along with Ph.D. Student Annie Keeney have presented evaluation and HICAHS projects at several national meetings.

Three evaluation project highlights will be presented in this report. First, a successful impact this year was the continued testing and validation of a survey instrument developed to reflect constituency feedback on the move of various HICAHS projects from research to practice. We now have enough data to illustrate the instrument's utility as method for evaluating a project's success of moving from research to practice. Research-to-practice (r2p) is defined by NIOSH as "a way of conducting research to help ensure that it is relevant to our stakeholders and results in the reduction of workplaces injuries, illness, and fatalities."[8] The results

from administering the R2P instrument were presented in a poster at the American Evaluation Association Conference in Washington, D.C. in October 2013.

A second major activity of the Evaluation Project has been the development, piloting and implementation of a Needs Assessment. This needs assessment is targeted at specific agricultural and forestry stakeholders in our six-state region as well as selected national representatives of the targeted commodity groups. Key research questions include: level of awareness of HICAHS and the NIOSH Agriculture, Forestry, and Fishing (AgFF) Centers as a whole; awareness of AgFF injuries/fatalities; concern for occupational injuries/fatalities juxtaposed with other common concerns among producers; other current health and safety concerns; perceived changes in AgFF; and a ranking of issues that affect the respondent's constituencies in the future. Finally, we ask how HICAHS can assist in responding to those concerns. The responses we have received have been thoughtful, informative and will clearly assist the Center as we move forward and plan for the next cycle of projects in 2016-2021.

Finally, the "Community Capacity Building for Disaster Planning for Pets and Service Animals" grant, in its second year of funding, has accomplished its stated goals. First, we have successfully received a third year of funding to add video materials to the planning manual to be utilized by Extension Educators in communities. This USDA grant has been leveraged using HICAHS funds and we are in the process of analyzing the data based upon agent feedback, pre post testing with agents, and tabletop exercises to be presented at the 7th International Symposium of Safety and Health in Agricultural & Rural Populations in Saskatoon, SK, Canada, in October, 2014. Overall evaluation results of the Community Capacity Building for Disaster Planning for Pets and Service Animals project will be presented at the Annual Evaluation Conference in Denver, Colorado, in October, 2014.

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The reports contents are solely the responsible of the High Plains Intermountain Center for Agricultural Health and Safety and do not necessarily represent the views of the National Institute for Occupational Safety and Health. Report date: October 15, 2014.

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